

## ABSTRACT

~~The object of the present invention is to provide an~~ An ~~apparatus capable of measuring wavelength dispersion characteristic and other characteristics by using only a single fiber pair. In order to achieve said object, the apparatus according to the present invention includes~~ including a variable wavelength light source [[12]] for generating a variable wavelength light, ~~the wavelength of which is variable,~~ a first light modulator [[15]] for inputting into ~~[[the]]~~ a first optical fiber transmission line ~~[[32 the]]~~ a first incident light obtained by modulating the variable wavelength light by ~~[[the]]~~ a frequency of ~~[[the]]~~ an ~~electrical signals~~ signal inputted, a first optical/electrical converter [[22]] for converting ~~by the optical/electrical conversion process~~ the first outgoing incident light ~~having penetrated the first optical fiber transmission line 32,~~ a fixed wavelength light source [[21]] for generating a fixed wavelength light, ~~the wavelength of which is fixed,~~ ~~a power source (signal source) 25~~ a signal source for generating a reference electrical signal ~~signals of given frequencies,~~ a second light modulator [[23]] for inputting in ~~[[the]]~~ a second optical fiber transmission line ~~[[34 the]]~~ a second incident light obtained by modulating the fixed wavelength light by ~~[[the]]~~ a frequency [[fm]] of the reference electrical signal and a second optical/electrical converter [[16]] for converting ~~by the optical/electrical conversion process~~ the second incident ~~outgoing light having penetrated the second optical fiber transmission line 34 and for outputting the electrical signal~~ into the first light modulator [[15]]. ~~When the result of optical/electrical conversion of the first outgoing incident light and the reference electrical signals are available, it is possible to compute wavelength dispersion characteristic and other characteristics by comparing their phases.~~

Figure 1